



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,982	03/22/2001	Frank R. Miele	VWAVE.001CP2	7628

27299 7590 10/03/2003

GAZDZINSKI & ASSOCIATES  
11440 WEST BERNARDO COURT, SUITE 375  
SAN DIEGO, CA 92127

EXAMINER

JUNG, WILLIAM C

ART UNIT PAPER NUMBER

3737

DATE MAILED: 10/03/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/815,982

Applicant(s)

MIELE ET AL.

Examiner

William Jung

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 9,15-18,25-35,39 and 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-14,19-24 and 36-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 9,15-18,25-35,39 and 40 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |                                                                                               |                                                                                            |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                   | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>9</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____.                                                  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-8, 10-14, 19-24, and 36-38 are drawn to Group I, which locates blood vessel via ultrasound imaging, classified in class 600, subclass 443.
  - II. Claims 25-27 are drawn to Group II, which involves data storage, classified in class 369, subclass 86.
  - III. Claims 9, 15-18, and 28-35 are drawn to Group III, which involves positioning ultrasound device, classified in class 600, subclass 444.
  - IV. Claims 39 and 40 are drawn to Group IV, which is directed to pressure monitor and therapy, classified in class 600, subclass 438.

The inventions are distinct, each from the other because of the following reasons:

2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II, III, or IV, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Groups III or IV, restriction for examination purposes as indicated is proper.

Art Unit: 3737

5. Because these inventions are distinct for the reasons given above and the search required for Group III is not required for Group IV, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Robert Gazdzinski on September 23, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-24 and 36-38. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25-35, 39, and 40 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-8, 10-14, 19-21, 23, 23, and 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by *Suorsa et al* (US 4,721,113).

Suorsa et al disclose of an ultrasound system where the blood vessel and vessel wall are investigated using transmission of acoustic signal to a region of interest and analyzing the

Art Unit: 3737

reflecting acoustic energy. The analysis includes differentiating the amplitude (A-mode) attenuation of the different tissue type and tissue motion. The tissue type identifies blood vessels from the surrounding tissue and the tissue motion or even blood flow can be analyzed. The blood flow or tissue motion causes artifact, which can be identified and suppressed by weighting (power average) or demodulation. Suorsa et al also disclose of analog-to-digital converter (ADC) where the digitized data are analyzed via computer (col. 1, line 49 – col. 2, line 7; col. 3, line 12 – col. 4, line 14).

10. Claims 1, 2, 3, 6, 7, 11-13, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by *Torrence* (US 4,733,668).

Torrence discloses of an ultrasound system transmitting acoustic energy into a patient and receive reflected acoustic energy, which shows interfaces or discontinuities in tissues types such as blood vessel. Torrence states that the particular acoustic attenuation characteristic may be used to distinguish or identify tissue type such as blood vessel. Torrence also discloses of display mode in amplitude or A-mode. The amplitude or energy is derived as function of depths and time. In addition, Torrence disclose of analyzing backscattered energy caused by tissue motion to reduce artifact (col. 1, line 53 – col. 2, line 10).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3737

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Suorsa et al* or *Torrence* as applied to claim 19 above, and further in view of *Uchida et al* (US 4,630,612).

Suorsa et al or Torrence substantially discloses of all claimed invention in claim 22.

Uchida et al further teaches that the backscattered caused by motion of the blood flow compared to vessel wall during blood vessel imaging can be analyzed in Doppler process to measure the flow rate of the blood flow in the blood vessel. Therefore is would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Suorsa et al or Torrence to the teachings of Uchida et al to a achieve the claimed invention.

Art Unit: 3737

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Matzuk*** (US 4,584,880), ***Stewart et al*** (US 4,721,113), ***Pesque et al*** (US 5,718,229) and ***Iinuma et al*** (US 4,318,413)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung whose telephone number is 703-605-4364. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis Ruhl can be reached on 703-308-2262. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

WJ  
September 24, 2003

  
DENNIS RUHL  
PRIMARY EXAMINER